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Glass sculpture: Light and time

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Glass Sculpture: Light and Time

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Thesis Report

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Abstract:

Glass vessels are produced in dynamic asymmetrical shapes that are a deliberate study in the contrast between machined and organic forms. The Houda series integrates these elements using evocative or directly narrative surface treatments to color the glass. A sense of monolithic sculptural presence is created by the use of architectural motifs and classic figurative components.

Introduction:

The ability to distinguish one thing from another is a critical process to accomplishing cognitive thought. This activity is intimately tied to the memory of the significant characteristics of the examined object or concept. Defining something allows us to separate it from the surrounding environment, analyze it, and judge it's impact on our existence. Language is best served by the use of words that have singular, clear, and well defined meanings. Even though two words might seem to be exact synonyms they can not be identical. There must be fine distinctions in inference that provide conceptual diversity.

Biblically Adam has the responsibility for naming all things in creation. By naming, and consequently defining, the world man was empowered and became preeminent. Since the environment provides us with too much information to interpret without overloading, a filtering system is necessary[1]. The generalizations produced by language provide this filter, but also color our perceptions of the world.

To define and codify Art has been an ongoing struggle from the days of Hypocrites, and probably before. The early Greek authors propose a dialectic between Art and Nature, with all human

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[1] Some biases are survival characteristics, not intentional prejudice. The necessity for rapid decision making precludes examining first principles on every occasion for an assessment (A noise that increases in volume is usually interpreted to mean the noise producer is approaching the hearer. No analysis of Doppler principles is necessary to move out of the way when a siren get louder on a busy road). A predilection often exists to simplify our complicated existence. The key is to remain open to changing those predilections with environmental changes.

endeavors being classified as some type of art everything else being "natural". Preliminary investigations into aesthetics were concerned primarily with the qualification of Beauty as embodied in poetry, drama, sculpture, and architecture, all thought to be divinely inspired by the appropriate muse.[2] Joseph Campbell suggests that the primitive mind was more visual, with a less well defined separation between conscious and subconscious thought. Ideas and images, produced in what we would consider subconscious thinking processes, on passing into conscious awareness might have seemed to be messages delivered by the gods.[3] This elevated artwork in the eyes of both the artist and the viewer to an ethical and spiritual level that today's celebrity artists only aspire to.

Language is much more than mere words. Concepts and objects can be described and thought of both verbally and visually. Tolstoy states: "art is one of the means of intercourse between man and man.".[4] His attitude is that art is essentially an *activity* that enables communication of *emotion* (with all other forms of communication being more appropriate for conveying thoughts). The activity of making is the important criteria as opposed to the end product.

From an existential perspective the difficulty in two individuals communicating clearly is obvious. As there are no Platonic

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[2] Kriskeller believes that there has been an evolution in man's attitude toward Art, and supports his assertion with experts from writings on Aesthetics.

[3] Campbell's series on the importance of myth emphases that myths are a record of the philosophy and ethics of past individuals, but apply in equivalencies to us today. His work also examines the cultural similarities and differences in a variety of topics, including creativity and art.

[4] Tolstoy, Leo "What is Art?" World's Classics Series, 1930 Oxford University Press, London

"absolutes" we can only make assumptions about what each term used means. A standard method for approaching some level of understanding is to carefully define all abstractions under discussion. Of course it would be impossible to attempt to reduce all our terms to an easily understandable simplicity. We can only use these insufficient words to construct our definitions.

"A work of art expresses a conception of life, emotion, inward reality...it is a developed metaphor, a non discursive symbol that articulates what is verbally ineffable- the logic of consciousness itself." [5]

I prefer to define art as a catalyst for communication. This is the communication of the "ineffable" directly from artist to viewer, indirectly from the artist's subconscious to the artist, or indirectly from the viewer's subconscious to the viewer. Using this definition explains how an artist finds things in the completed work that were not in the original plan. Also it validates the beholder seeing things in the art that may not have been intended by the artist. This broadens the standard definition of art to anything that is successful at accomplishing this aim of communication. A corollary to this is a criterion for judging the relative merits of a work, i.e., the more information communicated or inspired the "better" the art. This is a purely subjective judgment since, under this definition, art can be created both by a maker and the viewer.

It is important to note that art is particularly well adapted for the transmission of non-verbal ideas. These abstractions are subject

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[5] Langer, Susanne K. " Expressiveness" Problems in Art, 1957, Charles Scribner's Sons, pp. 26

to a curious Heisenberg-like uncertainty [6]: if they are analysed the content is lost in the translation. There are certain things that can not be scrutinized with the harsh white light of the scientific method. The Zen philosophy about explanation illuminates this thesis:

> *"Special teaching, outside of scriptures,*
> *Not based on words and letters.*
> *Direct pointing to the heart of man."* [7]

The only verbalizations that can be used to communicate these "ineffibles" are evocative poetic utterances. Similarily, the concept of art is subject to analysis, but the emotional content communicated is not. The art itself is the only media capable of this particular discourse.

Another well discussed question is the difference between "Craft" and "Art". This is comparing two completely different classes of concept. Like Art, Craft is also variously defined; as a type of media, a quality of manufacture or a combination of each. Using the preceding definition of art it is clear that some craft work can be classified as Art, determined by its' communicative skills. In fact a piece could be considered "High Art" by a viewer while the maker regards it as a production item (i.e.. a Japanese tea bowl, Shaker

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[6] In Physics and Beyond: *encounters and conversations* (1971 Harper & Row) Heisenberg states :"Both science and art form in the course of the centuries a human language by which we can speak about the more remote parts of reality, and the coherent sets of concepts as well as the different styles of art are different words or groups of words in this language", an enlightened attitude typical of the man. His *uncertainty priciple* references the curious fact that if an electron, one of the basic building blocks of all matter, is located in space it's velocity can not be accurately determined. Conversely if an electron's velocity is known it's position can not be established. "Ineffibles" are similar - if we try to analyse an emotion we distance ourselves from it to such an extent that we can only make assumptions about it's content.

[7] Suzuki, op. cit., p.174; Alan W Watts, The Way of Zen 1957 Pantheon Books, New York, NY. p.88

cabinet, etc.). In this case the viewer has a greater proportion of the creative process - the art making experience. This is just as valid in this instance as it is in conceptual art, where the message can be communicated with minimal craftsmanship. Another example is Dadaist art where objects are taken out of their context with little or no craftsmanship and the viewer is responsible for the bulk of the art .

"The contemporary vessel is an object that presents the formal essence of the pot exaggerated to reveal a personal artistic vision uninhibited by pragmatic issues of function." [8]

I don't completely agree with Mr. Higby's insinuation that function is not an implicit element of a vessel. Certainly exaggeration for artistic vision is to be encouraged, but there is a certain ethic necessary to consider when making vessels. An understanding of function and historical significance precludes entering into the manufacture lightly. Vessels house us, carry us, and help feed us. A vessel may have been the first tool invented in our agricultural society. Actually the transition from "hunter/gatherer" to harvester would have been impossible without a vessel to store and preserve as well as cook the produce. Thus the vessel is one of the essential forms and should be treated with respect. To make a non-functional vessel just to be able to call it sculpture violates this tradition.

" ...the vessel...a vehicle for personal expressive content that at the same time is self-referential, embracing the structural, formal, and historical aspects of the container..." [9]

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[8]Higby, Wayne "The Vessel is Like a Pot"; pg 39 American Ceramics V 3/4 1985

[9]Marks, Grahm Nelson, Kris Taylor, Michael (exhibition curators) "Curators Statement"; pg 2 Architecture of the Vessel (show catalog) 1986 Bevier Gallery ; Rochester, NY.

Vessels can be elevated to art in a number of different ways. As stated earlier the viewer's perception of the significance of the vessel's form can communicate both an emotion and an idea. An additional layer of meaning can be added by the manufacturer, enabling the manufacturer to also be considered an "Artist". This can be intentional, or the choices the artist makes (in the proportions of the form and the design of the surface) can be selected without conscious decision. The importance of a painter knowing when to stop, or a photographer knowing when to shoot a picture, is echoed in the decision of the vessel maker to save a piece, or discard an entire line of work.

As a media glass presents two advantages. On initial observation the unique optical properties are readily apparent. Light is refracted, reflected, and absorbed by glass, creating an object that appears to only partially exist in the mundane physical universe. The range of color produced by this manipulation of light allows the creation of an impressive array of surface embelishment. Light defines glass and in turn is refined by it. The foremost characteristic of glass is that it is an intrinsically beautiful material.

The other media specific property of glass is more subtle. Like any crafted object a piece of glass art gives us clues to the process of manufacture. Handcrafted objects are particularly time intensive. The immediacy of glassblowing, and the necessity for persistence in formation, emphasizes this tendency. Time, that elusive commodity, is captured in historical record in these objects. Someone with knowledge of glass technology can look at a blown work and determine the painstaking effort of manufacture, and often the

training necessary to produce the piece as well. Like the freezing of the glass "liquid" the time is trapped in the finished object. The activity of making that Tolstoy finds the essential dimension of art is presented in subtle clues that enhance the enjoyment of the art.

The genesis of my work on the Houda[10] series is somewhat typical of the "fortunate accident" school of art. Rob Levin, acting as a visiting teacher, had given a short term project to experiment with the mold blowing process. The mold I made was a two part graphite mold with steel handles protruding from the top (see photo #6 figure 3). It was quite a large form, beyond my ability at the time to "free blow". That day the glass tank was only partially full, so when I took my last gather of glass it did not cover the entire piece. I attempted to roll back this gather line to cover enough of the piece to fill the mold, intending to cut this overlapping section away later (the Swedish "half-post" technique [11]). As it turned out I had been overzealous in my estimate of the size of the mold, the hot glass was almost twice the size of the graphite container. I blew the glass out anyway, not noticing that it was pushing into the wire mold handles. Fortunately I was still able to open the mold and take out the form.

On examining the product I saw that a curious sculptural form had been created, embodying a dichotomy between a crisp mechanistic lower section and an unrestrained organic top. The partially constrained center section, formed by the wire handle blowout, provided a transition zone between the two. On further

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10 A Hungarian word which translates as bottle or vessel in English that is used to avoid overuse of the term "Sculptural Vessel".

11 Basic mold blowing technique from the class notes from Marvin Lipofsky's glass class at the California College of Art and Crafts

examination I found that the figurative elements (present in all vessels) were emphasized by the organic lip, half-post collar , and overblown shoulder. Later experimentation emphasized these characteristics, using different molds and surface decoration to define the form. Most critical was a careful procedure to successfully repeat what had originally been an accident.

There is a voluptuous presence to the exaggerated breast and buttock forms that are suggested by the wire restrained sections in the houda series. While this was not consciously intended it is no less valid, since I selected this form for further study out of the hundreds I experimented with during graduate school. There is a long tradition in using the figure, or elements of the figure, in the creation of sculpture. As a form it is both the most familiar, revered and evocative:

*" Since prehistoric times fabricated body images have reflected their creator's sense of place and time in the scheme of things.... **Venus of Willendorf**, the first known figurative sculpture from the Aurignacian period of prehistory...held in the hand of a worshipper who had an instinctive awareness of his or her role in the cycle of life and of the importance of fertility to the social order."* [12]

Figure 1: Venus of Willendorf

"Stepped Purple Houda"

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[12]Nahas, Dominique "Alive on Arrival: Being a Little History of the Body in Western Sculpture"; pg 5 Figures Form and Fiction (show catalog) 1988 Everson Museum of Art ; Syracuse, NY.

The prehistoric Doni (female fertility figures), of which the Venus of Willendorf is the most prominent example, certainly provided some of the inspiration for the continuing series of the houdas. Another reference for these forms came from my undergraduate training in architectural design. When faced with the need to create a unique blown glass sculpture (without completely denying the essential function of a vessel) I found myself more in line with Mr. Higby's philosophy:

"One strategy for wedding function to the more abstract formalist concerns of Modernism can be seen in the appearance of sculpture that employs the vocabulary of architecture" [13]

I arrived at RIT in 1986 directly on the heel of the "Architecture of the Vessel" show, but unfortunately only viewed the work in catalog. My work is certainly related to architectural concerns: interiors and exteriors, human scale elements, and form directly influenced by function. There is also a deliberate attempt to create a sense of monumental scale within the limitation of the equipment available.

The surface techniques used in the houda series have also varied. First form studies were made in transparent colors (see figure #4 and 5). In these the emphasis is maintained on the sculptural elements, using small variations in tone to explore the dichotomy of the vessel's parts. Later work was done in layered opaque colors which suggest an Impressionist palette (see figures 7, 8, and 9). The intention was to provoke an emotional response to the

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[13]Higby, Wayne "The Vessel is Like a Pot"; pg 39 American Ceramics V 3/4 1985

surface as well as the form. Color combinations were inspired by topical situations or were chosen to mimic seasonal variation . Finally the Graal[14] technique was used in an attempt to make a deliberate narrative statement (see figures 10 and 11)[15].

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[14] A technique developed in the Oreffors Glass Factory in 1916. A short description is outlined in the procedure section. .

[15] Narrative themes echoed the architectural motif with inspiration from literature (Nathan's maze from The Name of the Rose by Umberto Eco) and a interior design project I was simultaneously engaged in (a kitchen remodeling). Proposed series continuation is to be inspired by other famous mazes: the labrynth of Daedalus at Knossos, the marble wall maze in the Emperess's Summer Palace in the Peoples Republic of China...

Procedure

After the initial fortuitous accident the creation of the houda series proceeded at a more pedestrian pace. First pen and ink sketches, then large scale charcoal drawings were made of the pieces. The mold was designed and approximate dimensions and angles were determined. These were transferred to sheet graphite using a steel ruler and scribe. The graphite used was scrap material discarded as end cuts from a local graphite processing plant, and needed significant processing to be used.

Preliminary forms were cut from the graphite sheets using a bandsaw with a 1/2" wide wood blade. Approximate angles were produced by tilting the saw bed and freehand cutting along the scribed line. Final angle and lap joints were refined using a combination belt and rotary sander. It is important to note that in any graphite processing a large amount of fine particulate is produced so a respirator and vacuum capture system are recommended.

These graphite mold sides were then assembled using drywall screws. Holes were pre-drilled in the graphite sheet using a drill press with an angled table to provide the designed draft angle. Most of the houda molds were designed in one part with no active elements. The bases were usually simple geometric forms as mandated by the crude mold making tools available. Any undercuts in the final piece were produced by further manipulation of the hot glass after it was blown into the mold. The finished mold was

preheated with a propane fueled roofing torch before each work was blown. This resulted in the removal of residual moisture and prevention of surface chill marks.

Once the molds were completed glassblowing proceeded in a straightforward fashion. Transparent colored pieces used a single overlay of densely colored glass over the initial clear bubble. Several other gathers were then made, dependent on the final size, with the last gather a partial, or half-post gather. This glass was marvered off the surface of the prior bubble to form the pronounced characteristic collar (see photo #4, figure 3). This assemblage is then blown into the preheated mold (see photo #5, figure 3). Temperature was equalized in the houda form by repeated heating and cooling in the glory hole, and liberal use of the roofing torch. Once the base of the work was cooled enough to solidify[16] a pontil was attached and the lip was finished.

After the transparent form studies were generated several times, both to learn the idiosyncrasies of each mold and to refine the design of each series, opaque coloring systems were developed. These involved multiple overlays of colored glass (typically white covered with a transparent color) and layers of carefully applied colored glass frit, powders and metallic oxides (see photo #2, figure 3). Two layers of clear glass completed the preparation for mold blowing this series.

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16 Most of the vessels were designed with deliberately thick bases for stability which took proportionally longer to cool. In addition it was found that to get the best definition from the bottom of the mold the lower section of the piece had to be heated much hotter than the top. The neck in particular needed to be fairly stiff since that small diameter had to support the weight of the entire piece on the blowpipe.

The last series of houdas used the Graal technique to create intentional patterning for the surface design. Using a double blown overlay a cone shaped blank was produced with two layers of color on the exterior surface. After annealing the blank was covered with a resist ("buttercut" a 3M product). Portions of this resist were removed and the exposed areas were sandblasted until the external color was excised. The blank was slowly heated to 1000 deg.F. and picked up by a two gather bubble of glass. After the blank was heated to blowing temperature (approximately 2000 deg F) the design was carefully marvered flat. This enabled the two final layers of glass to cover the blank without trapping air bubbles in the crevices left by sandblasting.

Data

Figure 2.

Venus of Lespugue.
Aurignacian, c. 20,000-15,000 B.C.,
Ivory, height 5 3/4"

Butterfly Houda
Hertzson, c. 1990's A.D.
Glass, height 18"

Venus of Lespugue.
Aurignacian, c. 20,000-15,000 B.C.,
Ivory, height 5 3/4"

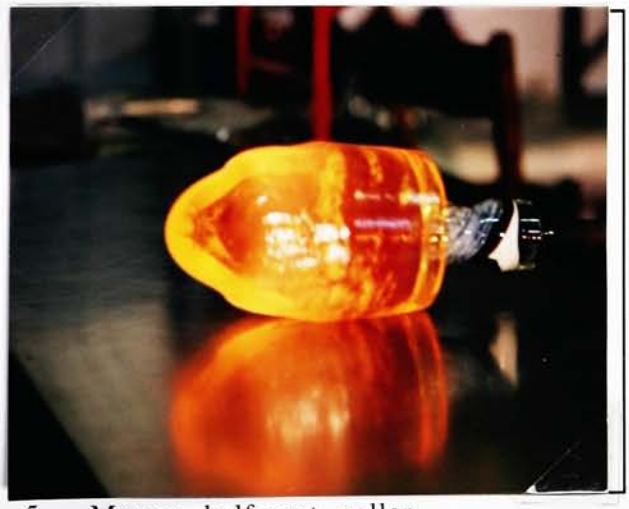
Figure 3.: Process photographs for the blowing of a "Triangular Houda"

1. Double color overlay

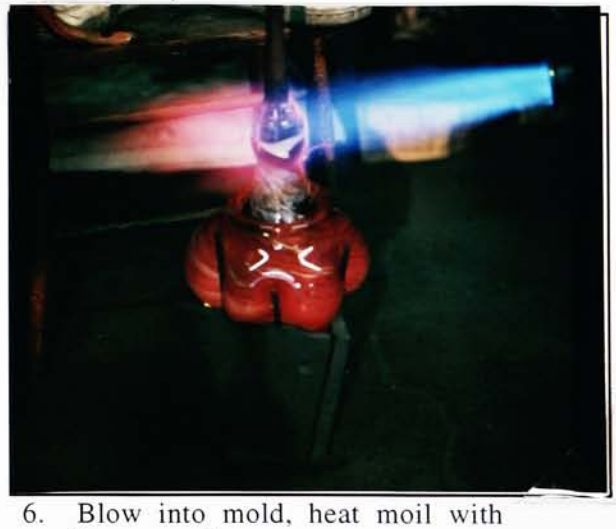
2. Addition of enamel colors

3. Neck top of Houda with jacks

4. Marver preliminary form



5. Marver half-post collar



6. Blow into mold, heat moil with roofing torch

7. Attach pontil to bottom of piece

8. Finish neck

9. Heat completed Houda before annealing

Figure 4.: Amber Triangular Houda (form study)

Figure 5.: Purple Stepped Houda (form study)

Figure 6.: "Party Time" (collection of Harry Welsh)

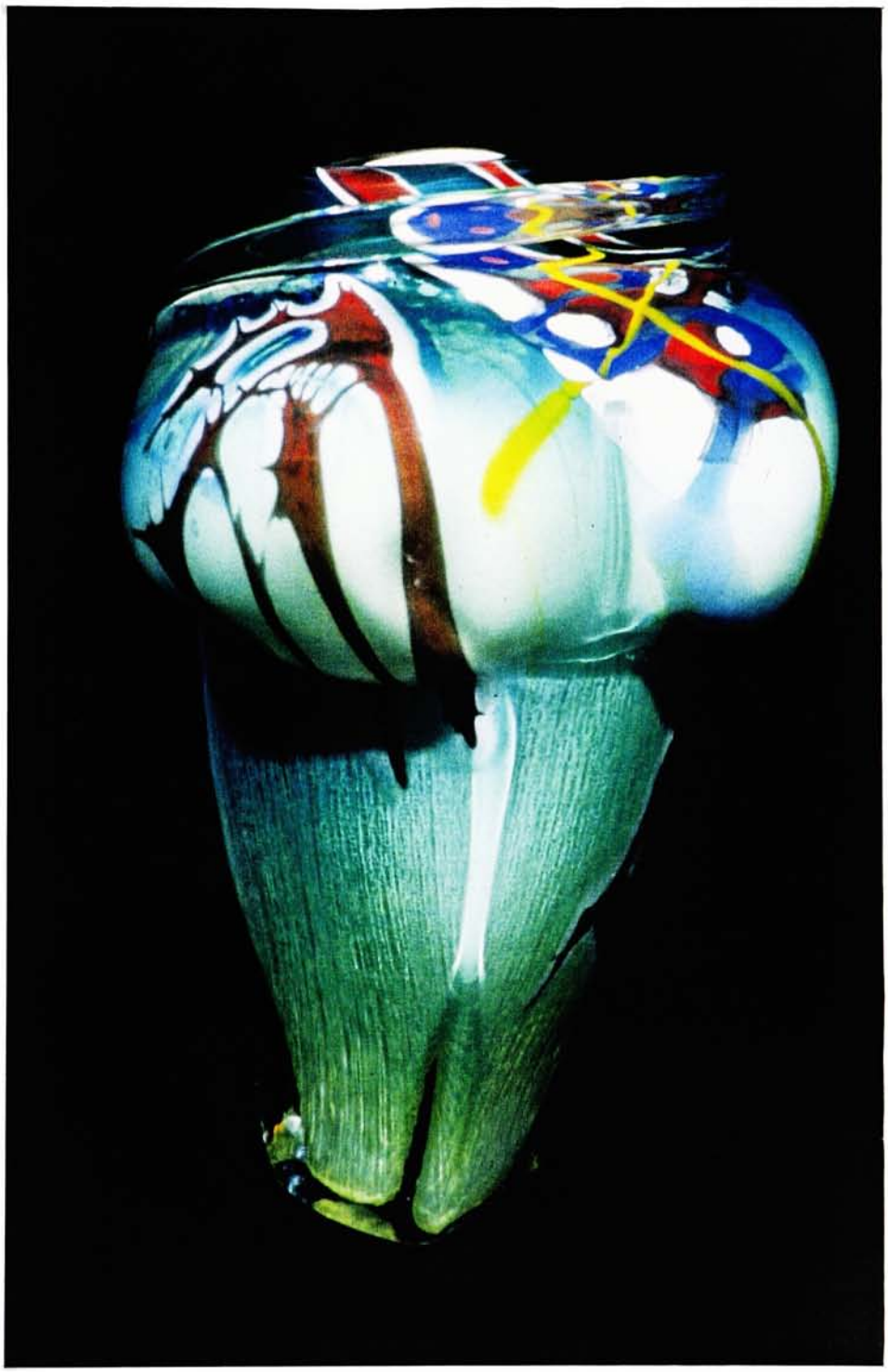


Figure 7.: "Leaves Falling" (collection of Wallace Library)

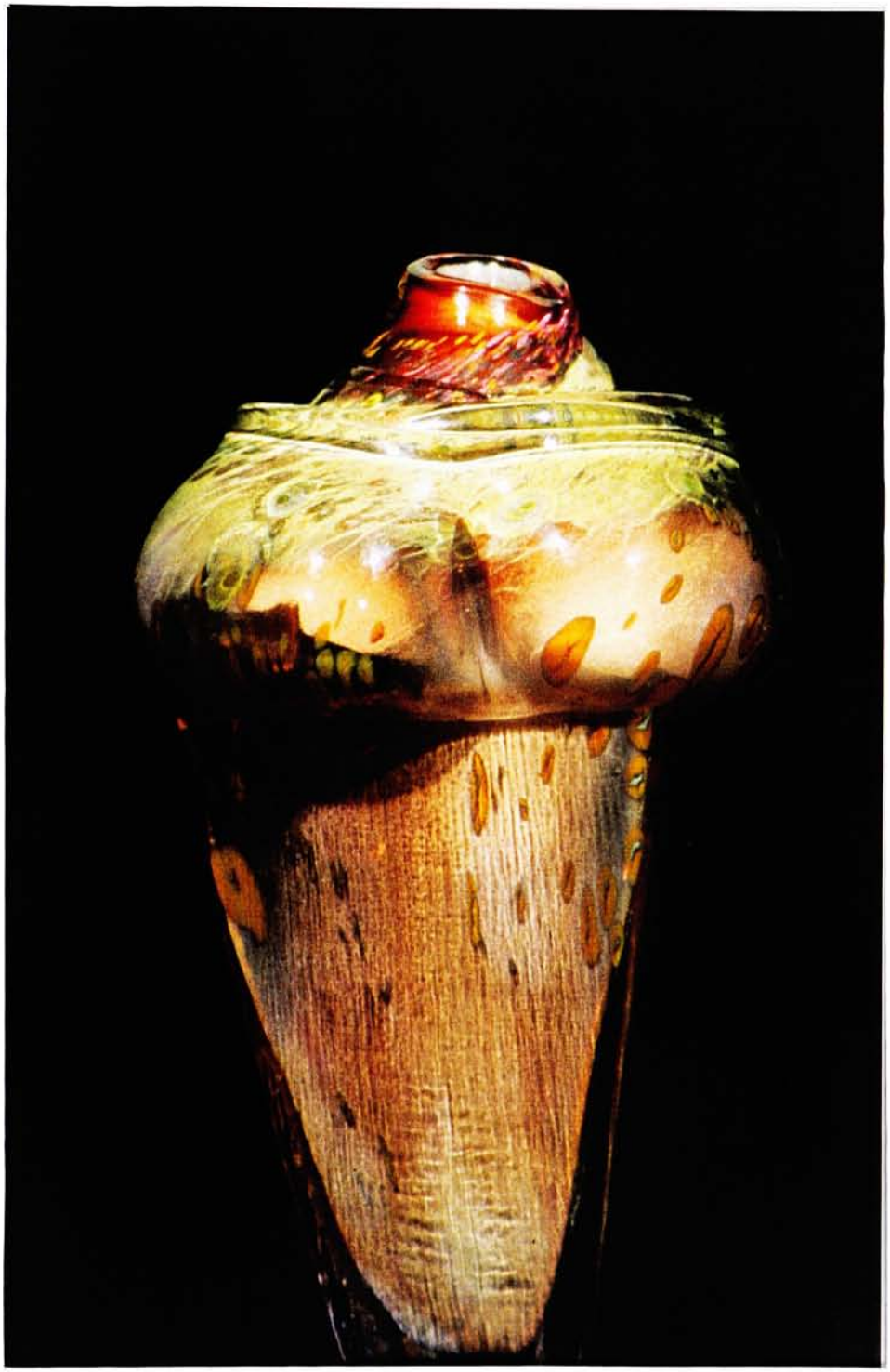


Figure 8.: "She Said..." (collection of John xxx)

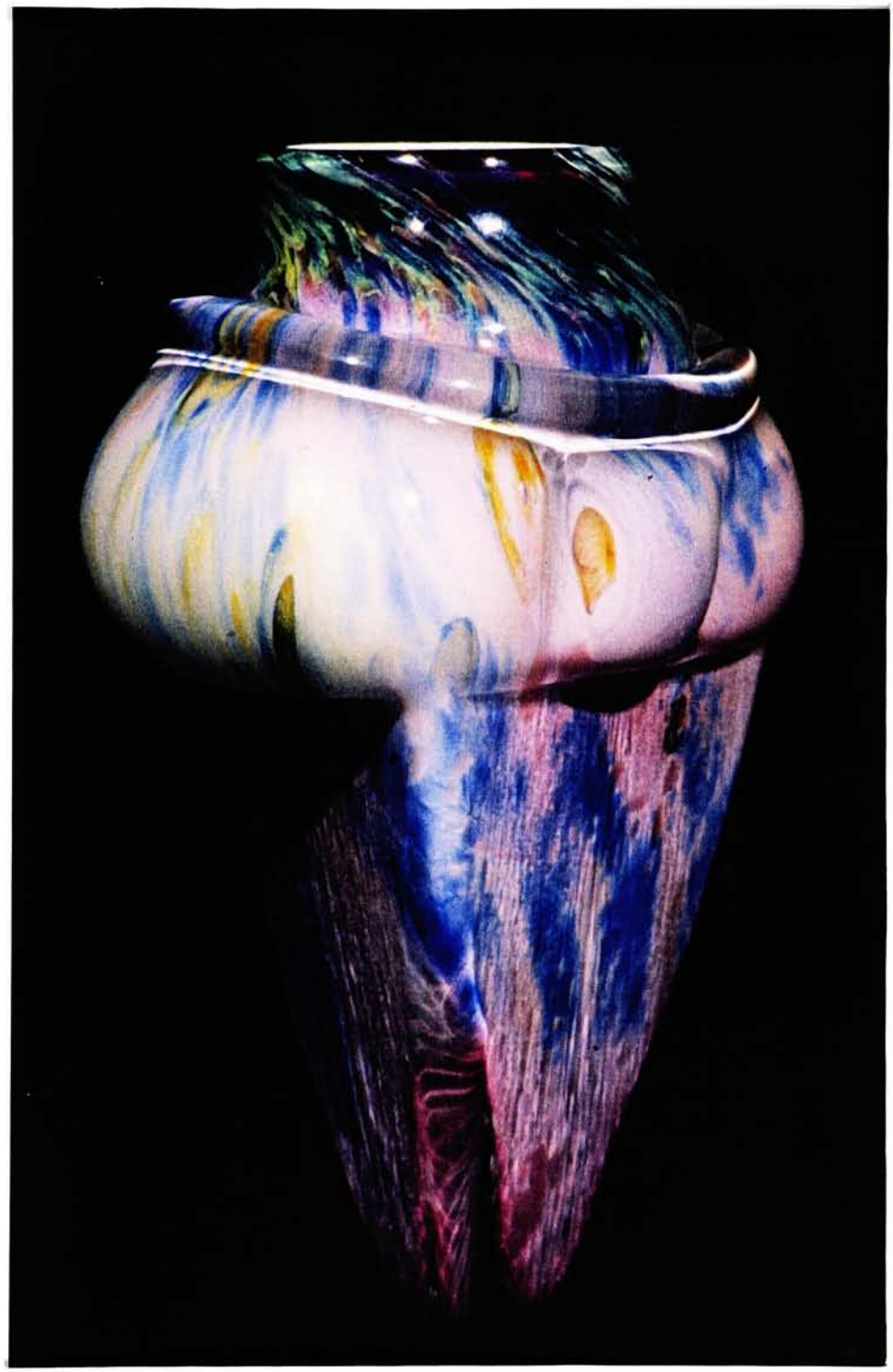


Figure 9.: "Dawn Overhang Houda" (New Glass Review 1994, Finger Lakes Art Show 1994, collection of RIT Presidents Office)

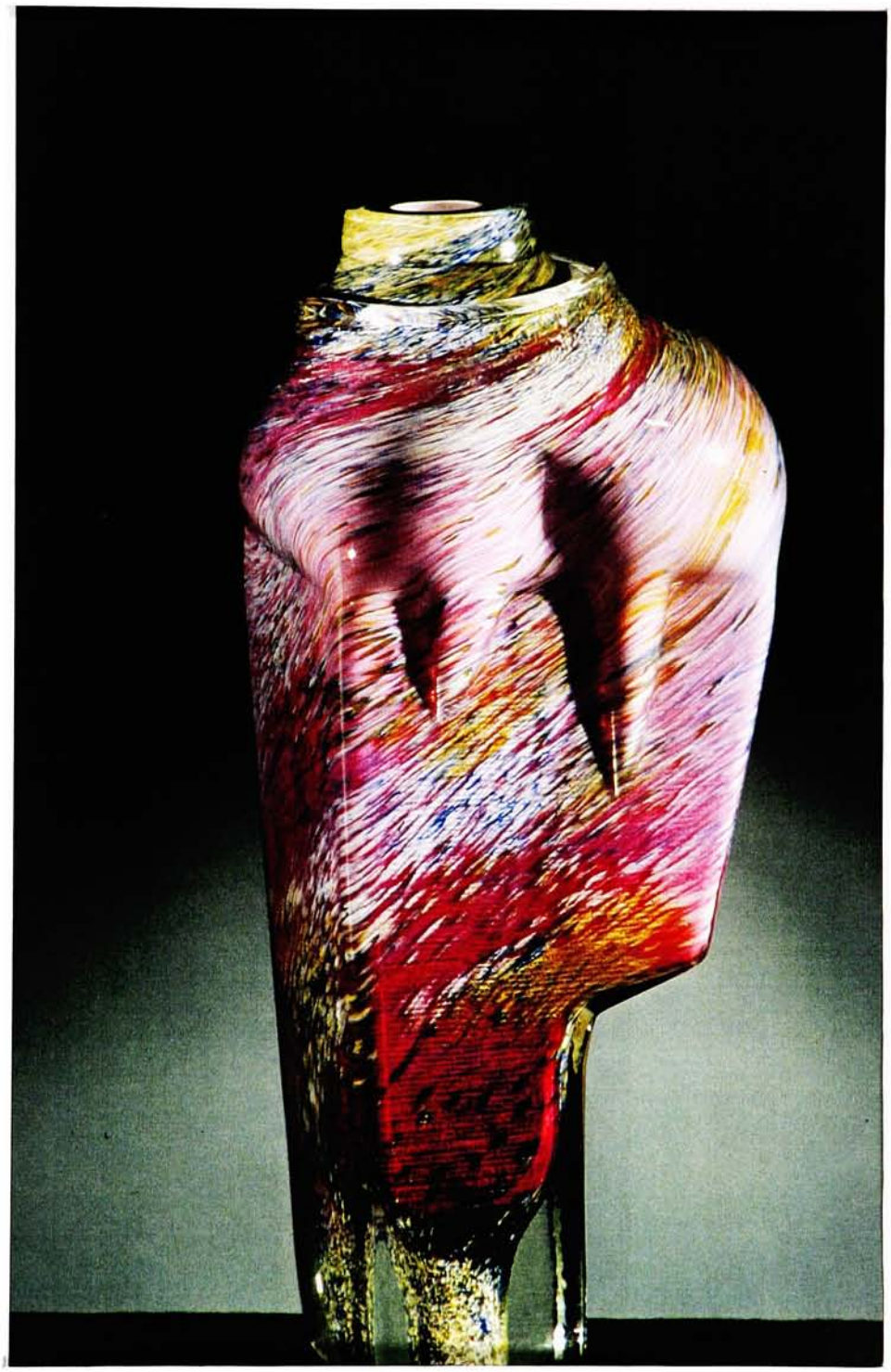


Figure 10.: "Dancers on the Edge 1"

Figure 11: "Kitchen of my Dreams" (collection of the artist)

Conclusion

The Houda series transcends the limits of blown glass vases and approaches the classification of sculpture. The figurative references allow the houda's dichotomy of mechanical and organic form to represent the many dualities implicit in human nature. "Hard" and "soft" forms resolve into a harmonious whole, echoing the hope that our emotional and rational, masculine and feminine, speculative and conservative components can be similarly reconciled.

An added layer of dialog is introduced by the evocative surface treatments. Fluid color combinations are inspired by emotions, seasonal variations, and speculative fiction. These combine with the unique form of the houdas to allow the viewer to interpret numerous visual images. The true success of any work of art lies in the hands of the viewer. If communication takes place it is an achievement contributed to by both the sender and receiver of information.

Bibliography

---Anderson, Alan Ross Minds and Machines, 1964, Prentice-Hall Inc., Englewood Cliffs, NJ.

---Campbell, Joseph "Primitive Mythology Vol.I" The Masks of God 1962, Penguin Books, NY.,NY.

---Gill, Michael Image of the Body, 1989, Doubleday, New York, NY.

---Higby, Wayne "The Vessel is Like a Pot"; pg 39 American Ceramics V 3/4 1985

---Kennick, W.E. Art and Philosophy *readings in Aesthetics*, 1979, St. Martin's Press, New York, NY.

---Kristeller, Paul Oskar "The Modern System of the Arts" Journal of the History of Ideas, 12 (1952) pp.17-46

---Kulasiewicz, Frank Glassblowing *the Technique of Free-Blown Glass* 1974 Watson-Guptill Publications, New York, NY.

---Langer, Susanne K. " Expressiveness" Problems in Art, 1957, Charles Scribner's Sons, pp. 13-26

---Littleton, Harvey Glassblowing *a search for form* 1971, Van Nostrand Reinhold Co., New York, NY.

---Marks, Grahm / Nelson, Kris / Taylor, Michael (exhibition curators) "Curators Statement"; pp. 2&3 Architecture of the Vessel (show catalog) 1986 Bevier Gallery ; Rochester, NY.

---Mehlman, Felice Phaidon Guide to Glass 1983, Prentice Hall, Englewood Cliffs, NJ.

---Nahas, Dominique "Alive on Arrival: Being a Little History of the Body in Western Sculpture"; pg 5 Figures Form and Fiction (show catalog) 1988 Everson Museum of Art ; Syracuse, NY.

---Phillips, Phoebe The Encyclopedia of Glass 1981, Crescent Books, New York, NY.

---Polak, Ada Glass 1975 G.P. Putnam's Sons, New York, NY.

---Rawson, Philip "The Articulation of Inner and Outer Space"; pp. 5-11, Architecture of the Vessel (show catalog), 1986 Bevier Gallery; Rochester, NY.

---Shilain, Leonard Art & Physics *parallel visions in space, time &light*, 1991, William Morrow and Co., New York, NY.

---Tolstoy, Leo "What is Art?" World's Classics Series, 1930 Oxford University Press, London